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Gender Difference in Social Presence Experienced in e-Learning Activities

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Abstract

The concept of social presence has gained much interest among researchers in relation to the quality of e-learning experienced by students. Experiencing social presence, which is the degree to which a person is perceived as 'real' in mediated communication, can be somewhat challenging in e-learning environment. This study examined the social presence experienced by undergraduates and their perceived motivation to partake in e-learning activities at a university. Data was collected from a survey of 51 students who were required to take part in a portal as a requirement for an undergraduate course. Statistical test of t-test and ordinary descriptive analysis were used. The study found that students both males and females were generally motivated to engage in e-learning activities. The study recorded a statistically significant difference of social presence experienced in e-learning activities among the male and the female students. Therefore, further research has to be conducted to determine the extent of social presence differences felt by students and ways to enhance social presence which would result in students' motivation and satisfaction in e-learning activities.

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1. Introduction

Malaysia Education Online (MEdO) has been part of the Malaysia Government Transformation Plan (GTP) to expand distance learning. With Asia currently recording the largest number of online and distance learning learners in the world, (Clothey, 2010), one can expect the progress and rapid growth in the number of students taking online courses. To date further research is needed on the experiences of students taking online courses related to course satisfaction and learning outcomes (Halter, Kleiner, & Hess, 2006). One of the concepts that have been explored in relation to the quality of online learning experienced by learners is their perceived social presence. Social presence is the degree to which a person is perceived as 'real' in a mediated environment such as in online communication (Gunawardena & Zittle, 1997). One of the key factors that determine the success of pursuing distance education learning is the feeling of social presence in online interactions (Rourke et al. 2004). Online forums as forms of computer-mediated communication (CMC) are different from those face-to-face distance education programmes because emphasis is placed between tutors and students (Weaver & Albion, 2005). While existing studies show that social presence is an important construct in online education, further research with local essence is needed. The purpose of this paper is to discuss the findings of social presence in quantitative terms on gender differences experienced by the participants in this study.

2. Background of the Study

Social Presence is an important component of e-Learning experience based on the social presence theory (Rourke et al. 2004). Social presence is required for interactivity because participants need to feel the presence of others for the conveyance of meaning (Shanthi & Thayalan 2009; Shanthi & Thayalan 2010). In an educational context, social presence could predict learners' satisfaction of online interaction environment (Shanthi & Thayalan 2009; Shanthi & Thayalan 2010). This is mainly because interaction is necessary for the success of distance learning programmes (Rourke et al., 2004; Nippard & Murphy 2007; Mykota & Duncan, 2007). Nevertheless, researchers have found that students' online interaction often lack social presence characteristics (Garrison, et al., 2000).

2.1 Social Presence in Online Education

One factor that is particularly significant to online learning is creating social presence. In the context of online communication, it can be defined as the ability of participants to project their physical and emotional presence (Abdullah, 2004). For Garrison & Anderson (2003), it means creating a climate that supports and encourages probing questions, scepticism and the contribution of more explanatory ideas that facilitates learner involvement in the online learning environment. Studies of social presence in web based learning at a post-secondary level indicate that it affects student perceived learning (Richardson & Swan, 2003) and that it may increase the satisfaction of students' online experience (Shanthi & Thayalan 2009; Shanthi & Thayalan 2010). It may also lead to greater emotional satisfaction through a sense of well-being in the classroom environment (Rourke et al., 2004). Evidence suggests that when learners experience a high degree of social presence they are more likely to engage in higher order critical thinking (Garrison, Anderson, & Archer, 2000); actively participate in computer-mediated communications (Danchak, Walther, & Swan, 2001); are less likely to drop out of their classes (Cobb, 2009); and are more satisfied with their learning experience (Shanthi & Thayalan 2009; Shanthi & Thayalan 2010). Indicators of social presence in online interactions include personal forms of address, acknowledgement of others, expressions of feeling, paralanguage, humour, social sharing and self-disclosure (Rourke et al. 2004).

Social presence theory emphasises that the perception of the feelings of the presence of within a social context is very important for the participation of students in online environments. Since learning occurs

socially within communities of practice; there is greater variability in sense of community ratings among online courses than in face-to-face courses (Gunawardena & Zittle, 1997). In an online environment, social presence becomes even more important due to the absence of visual and auditory cues. Short et al. (1976) explain that when the communication mediums become restricted, social presence within the group decreases. This affects group cohesion to become negatively low and members feel disconnected. Because social presence arises through being able to project one's self affectively within a medium (Garrison & Anderson, 2003) the conditions for establishing a social bond, or emotional tie must be present. Tu and McIsaac (2002) stressed the relationship between interactivity and social presence, noting that increased interaction improves the level of social presence. Therefore, if social presence is high, the group members enjoy the feeling of joint involvement.

2.2 Gender Differences in Online Interaction

Gender differences in online environments are not as prevalent as in face-to-face interaction as there is no bodily presence in virtual communication, online users rely purely on language as cue for meanings (Pohl & Michaelson, 2005). However, issues surrounding gender and discourse styles in virtual communication have been an important interest for research (Arbaugh, 2000; Rodino, 1997; Garland & Martin, 2005; Herring, 2001). It is believed that that CMC reduces gender-influenced inequalities that are often observed in face-to-face communication (Wojahn, 1994). Given this assumption, CMC enables both male and female participants to share, confront, and discuss differing viewpoints which allows students to engage in critical discourse (Johnson & Johnson, 1992). However, research findings have not been conclusive as social constraints manifested by gender differences continue to place a significant influence on gender behavior and participation in CMC.

2.3 Information literacy for 21st century

The relationship between motivation and learning is well established in traditional educational research and applies equally well in distance learning environment. Postle et al. (2003) argues that motivation influences the level of student participation in online discussion. Additionally, generating and maintaining motivation in a distance learning environment appears more complex than in traditional classrooms given the reduced direct interaction between students and instructors (Postle et al., 2003). Therefore, staying motivated in a virtual class is a challenge for students taking up a web based education. Students who find motivation to learn online find it a great asset to the online learning experience, one that can keep them from losing interest or burning out. Without a doubt motivation can promote a rich learning experience for distance learning students and provide a foundation for them to develop their online learning skills.

3. Methodology

The data used in this study is primarily quantitative. The questionnaire for this study consisted of Likert-like scale questions which required the participants in this study to circle an option that best describes their online experience. The variables studied in the study were determined by the researchers after observing and monitoring the respondents' online behaviors. The variables selected were students' motivation to interact in online forums, and under the umbrella of social presence the variables selected were; awareness of the presences of other students during online forums, and sense of being part of an online community. The quantitative data obtained from the participants was analyzed with the aid of the SPSS Version 17.0 software. An independent t-test was conducted to check if there was any significance difference between the mean scores for the variable that are studied.

4. Results

The section below presents the analysis of quantitative data based on the questionnaire answered by the students. Table 1 shows the descriptive analysis of the students claimed motivation to visit online forums.

Table 1. Motivation to visit online forums

Questions	Strongly Disagree %		Disagree %		Not Sure %		Agree %		Strongly Agree %	
	M	F	M	F	M	F	M	F	M	F
I enjoy taking part in the online forums.	0.0	3.4	4.5	3.4	22.5	13.6	67.5	68.0	4.5	10.2
I like to read the discussions in the online forums.	0.0	0.0	0.0	0.0	0.0	3.4	85.5	88.4	40.5	6.8
I think online forums are a waste of time.	0.0	3.4	4.5	10.2	27.0	34.0	63.0	47.6	4.5	3.4
I find it easy to take part in online forums.	0.0	3.4	4.5	13.6	18.0	17.0	67.5	57.8	9.0	6.8
I contribute to the discussion in the forums after reading the course modules.	0.0	0.0	9.0	3.4	45.0	30.6	57.6	45.9	0.0	10.2

*M- Male (N=22)

F – Female (N=29)

Table 1 shows that the male and the female students in this study enjoyed taking part in the online forums (Agree: Male 67.5%; Female 68.0%) and they liked to read the discussions in the online forums (Agree: Male 85.5%; Female 88.4%). This shows that generally, the students were motivated to take part in online forums. Table 3 below shows the descriptive analysis of the students' claimed motivation to complete the distance learning education.

Table 2. Motivation to complete the distance learning education

Questions	Strongly Disagree %		Disagree %		Not Sure %		Agree %		Strongly Agree %	
	M	F	M	F	M	F	M	F	M	F
One of the reasons I continue my distance learning programme is because on-line forums have benefitted me	0.0	0.0	4.5	0.0	18.0	3.4	63.0	78.2	13.5	17.0
I am motivated to continue my distance learning education because online forums boosted my confidence.	0.0	3.4	13.5	13.6	18.0	10.2	58.5	61.4	9.0	10.2
I am confident to complete the course that I am taking because of the online forums.	4.5	0.0	4.5	6.8	18.0	10.2	63.0	74.8	9.0	6.8
Online forums remove some stress that part-time students encounter.	0.0	0.0	45.0	0.0	4.5	6.8	49.5	85.0	0.0	6.8

*M- Male (N=22)

F – Female (N=29)

As seen in Table 2, the male and the female students in this study claimed that one of the reasons they continued their distance learning programme was because on-line forums had benefitted them (Agree: Male 63.0%; Female 78.2%) and they were confident to complete the course that they were taking because of the online (Agree: Male 63.0%; Female 74.8%). This indicates that the students were generally motivated to complete the distance learning education because of the benefits of taking part in online forums. Table 3 below shows the descriptive analysis of the students' claimed motivation to know the course content through online forums.

Table 3. Students' claimed motivation

Questions	Strongly Disagree %		Disagree %		Not Sure %		Agree %		Strongly Agree %	
	M	F	M	F	M	F	M	F	M	F
Online forums widen my knowledge on the course content taught by the tutors.	0.0	0.0	9.0	3.4	13.5	17.9	63.0	68.0	13.5	10.2
The discussions in the forums provoke my ideas and thoughts about the course content.	0.0	0.0	4.5	10.2	22.7	6.8	67.5	71.4	4.5	10.2
I read the comments on course content given by other students with interest	0.0	0.0	0.0	0.0	9.0	10.2	81.0	68.0	9.0	20.4
I am always able to ask questions about the course content that I am not sure of in the forums.	4.5	0.0	22.5	23.8	36.0	23.8	36.0	51.0	0.0	0.0
I always take part in online forums because I want to know the course content well.	0.0	6.8	4.5	6.8	27.0	27.2	58.5	47.6	9.0	10.2

*M- Male (N=22)

F – Female (N=29)

Table 3 shows that the male and the female students in this study claimed that online forums widen their knowledge on the course content taught by the tutors (Agree: Male 63.0%; Female 68.0%) and they read the comments on course content given by other students with interest (Agree: Male 81.0%; Female 68.8%). This indicates that the students were generally motivated to know the course content via online forums. Table 4 below shows the independent test of difference between the mean scores of students' claimed motivation to interaction in online forums.

Table 4. Independent test of difference between the mean scores of motivation to interaction in online forums

Gender	N	Mean	*S. D	S. Error	Levene's Test for Equality of Variance	t-test for Equality of means
Male	22	53.5909	3.67306	.78310	.412	p=.541
Female	29	52.7586	5.46845	1.01547		

p < .05

*Standard Deviation

As it is seen in Table 4 the mean score for the male students on their motivation to interact in online forums stand at 53.6 and the mean score for the female students stand at 52.8. The Levene's Test for Equality of Variance shows a probability rate of 0.412 which is greater than 0.05; $p > 0.05$. This indicates that the mean scores for the male students and the female students are relatively equal. The t-test shows

that the probability rate of $p = 0.541$, which indicates that $p > .05$. Therefore, there is no significance difference between the mean scores obtained from the male and the female students. This implies that there is no significant difference between the male and female students on their motivation to interact the online forums. Table 5 shows the descriptive analysis of the student claimed awareness of the presence of others in online forums.

Table 5. Awareness of the presence of others in online forums

Questions	Strongly Disagree %		Disagree %		Not Sure %		Agree %		Strongly Agree %	
	M	F	M	F	M	F	M	F	M	F
When I get access to the online forums, I know I am interacting with others.	0.0	0.0	18.2	0.0	9.1	6.9	72.7	75.9	0.0	17.2
I treat the comments in the online forums as words coming from people instead of a computer.	0.0	0.0	13.6	3.4	0.1	20.7	77.3	58.6	0.0	17.2
I pay attention to what other students say in the online forums.	0.0	0.0	18.2	0.0	9.1	17.2	72.7	69.0	0.0	13.8
I am always aware of the presence of other participants when they post their comment in the forums.	0.0	0.0	18.2	3.4	9.1	17.2	72.7	58.6	0.0	20.7
I direct my questions to the people in the online forums.	0.0	0.0	18.2	10.3	13.6	20.7	63.6	65.5	4.5	3.4
The other students are aware of my presence when they respond to my questions in the online forums.	0.0	0.0	9.1	13.8	40.9	20.7	50.0	58.6	0.0	6.9
I am very conscious about stating my views in the forums because others are observing me.	0.0	0.0	40.9	13.8	13.6	6.9	45.5	72.4	0.0	6.9
Each time when I return to the online forums I can recognize my friends.	0.0	0.0	36.4	13.8	9.1	0.0	54.5	82.8	0.0	3.4
I know the online forum I am interacting in is shared by others	0.0	0.0	13.6	3.4	9.1	3.4	77.3	86.2	0.0	6.9

*M- Male (N=22)

F – Female (N=29)

Table 5 shows that more male students than female student (Male 40.9%; Female 13.8%) disagreed that they were very conscious about stating their views in the forums because others are observing them compared to female students. Additionally, more male students than female student (Male 36.4%; Female 13.8%) disagreed that each time when they returned to the online forums they could recognize their friends. This indicates that the female students were generally more aware of the presence of others in online forums. Table 6 shows the independent test of difference between the mean scores of students claimed awareness of the presence of others in online forums.

Table 6. Independent test of difference between the mean scores of awareness of the presence of others in online forums

Gender	N	Mean	*S. D	S. Error	Levene's Test for Equality of Variance	t-test for Equality of means
Male	22	30.2273	4.11654	.87765	.035	p=.000
Female	29	34.2414	3.06658	.56945		

p < .05

*Standard Deviation

As it is seen in Table 6, the mean score for the male students on their claimed awareness of the presence of others in online forums stand at 30.2 and the mean score for the female students stand at 34.2. The Levene's Test for Equality of Variance shows a probability rate of 0.035 which is smaller than 0.05; $p < 0.05$. This indicates that the mean scores for the male students and the female students are relatively not equal. The t-test shows that the probability rate of $p = 0.000$, which indicates that $p < 0.05$. Therefore, there is a significance difference between the mean scores obtained from the male and the female students. This implies that there is a significant difference between the male and female students on their claimed awareness of the presence of others in online forums. Table 7 below shows the descriptive analysis of the claimed sense of community in online forums.

Table 7. Sense of community in Online Forums

Questions	Strongly Disagree %		Disagree %		Not Sure %		Agree %		Strongly Agree %	
	M	F	M	F	M	F	M	F	M	F
I feel like we are like a bunch of online friends in the forums.	0.0	0.0	4.5	0.0	4.5	6.9	90.9	93.1	0.0	0.0
I treat other participants as my online friends though I do not know him/her in person.	0.0	0.0	18.2	0.0	9.1	3.4	68.2	89.7	4.5	6.9
By interacting in the forums I get help from others.	0.0	0.0	36.4	0.0	4.5	6.9	59.1	79.3	0.0	13.8
All participates respect one another in the online forums.	0.0	0.0	22.7	0.0	9.1	3.4	68.2	82.8	0.0	13.8
Online forums could widen my circle of online friends who are taking the distance learning course.	0.0	0.0	31.8	0.0	4.5	6.9	63.6	86.2	0.0	69.0
I know I am accepted as a member of the online forums even when others do not respond to my comments	0.0	0.0	13.6	0.0	0.0	6.9	86.4	86.2	0.0	6.9
I feel comfortable with the people in the online forums.	0.0	0.0	45.5	0.0	4.5	3.4	50.0	93.1	0.0	3.4
I always help the people in the forums who have problems in the course content.	0.0	0.0	22.7	3.4	22.7	24.1	54.5	48.3	0.0	24.1

*M-Male (N=22)

F – Female (N=29)

As it is seen in Table 7 the male students (Male 36.6%; Female 0.0%) disagreed that they got help from others and they also disagreed that they felt comfortable (Male 45.5%; Female 0.0%) with the people in the online forums. This indicates that the female students generally had a sense of community in online forums than the male students. Table 8 shows the independent test of difference between the mean scores of students' claimed sense of community in online forums.

Table 8. Independent test of difference between the mean scores of sense of community in online forums

Gender	N	Mean	*S. D	S. Error	Levene's Test for Equality of Variance	t-test for Equality of means
Male	22	34.2273	4.17398	.88989	.014	p=.000
Female	29	40.0345	2.16272	.40161		

p < .05

*Standard Deviation

As it is seen in Table 8, the mean score for the male students on their claimed sense of community in online forums stand at 34.2 and the mean score for the female students stand at 40.0. The Levene's Test for Equality of Variance shows a probability rate of 0.014 which is smaller than 0.05; $p < 0.05$. This indicates that the mean scores for the male students and the female students are relatively not equal. The t-test shows that the probability rate of $p = 0.000$, which indicates that $p < .05$. Therefore, there is a significance difference between the mean scores obtained from the male and the female students. This implies that there is a significant difference between the male and female students on their claimed sense of community in online forums.

5. Discussion

The analysis of data shows that the distance learning students were generally motivated to take the distance learning course. The study found that the students enjoyed taking part in the online forums, and felt that the online forums enhanced their knowledge and thoughts on the course content. In fact, the students reported that online forums boosted their confidence to complete their distance learning courses. However, this study noted a disparity of social presence experience by the female and male students. The male students disagreed that they were conscious about stating their views and they were always aware of the presence of other participants in the forums. The female students, on the other hand, claimed that they treated the participants in the forums as friends, in addition, to believing that online forums could widen their circle of online friends who were taking the distance learning course. This shows that in e-learning activities, online tutors can expect the communicative style of males different from that used by females. Therefore in e-learning activities, male students can be expected to use more 'harsh' and 'crude' language whilst female students use more 'polite' and 'friendly' language.

6. Conclusion

As social presence in an important component in online communication (Rourke, 2004; Shanthi & Thayalan 2009; Shanthi & Thayalan 2010), it is suggested that online courses should effectively incorporate elements of communications strategies that enhance social presence in online courses among the male and female students. Further research has to be conducted to determine the extent of social presence differences felt by students and ways to enhance social presence which would result in students' motivation and satisfaction in e-learning activities

References

- Abdullah, M. H. (2004). An Examination of Social Presence Cues in Online Conferences. Language Education. Bloomington, IN, Indiana University.
- Arbaugh, J. B. (2000). An exploratory study of the effects of gender on student learning and class participation in an internet-based MBA course. *Management Learning*, 31(4), 503-519.

- Clothey, R. (2010). Current Trends in Higher Education: Expanding access in Asia Pacific through technology. *Comparative & International Higher Education* 2(3). Available: <http://www.higheredsig.org/cihe/Number02-02.pdf>.
- Cobb, S. C. (2009). Social Presence and Online Learning: A Current View from a Research Perspective. *Journal of Interactive Online Learning* 8(3). Available: <http://www.ncolr.org/jiol>.
- Danchak, M. M, Walther, J. B., & Swan, K. P. (2001, November). *Presence in mediated instruction: Bandwidth, behaviour, and expectancy violations*. A paper presented to the annual meeting on Asynchronous Learning Networks, Orlando, FL
- Halter, M. J., Kleiner, C., & Hess, R. (2006). The experience of nursing students in an online doctoral program in nursing: A phenomenological study. *International Journal of Nursing Studies*, 43, 99-105.
- Herring, S.C. (2001). Computer-mediated discourse. In D. Schiffrin, D. Tannen, and H. E. Hamilton (Eds.). *The Handbook of Discourse Analysis* (pp. 612-634). Oxford Blackwell Publishers. Available: <http://ella.slis.indiana.edu/~herring/cmd.pdf>.
- Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education*, 2(2-3), 87-105
- Garrison, D.R. & Anderson, T. (2003). *E-Learning in the 21st century*. London, Routledge Falmer
- Gunawardena, C. & F. Zittle. (1997). Social presence as a predictor of satisfaction within a computer mediated conferencing environment. *American Journal of Distance Education* 11(3): 8–26.
- Johnson, D., & Johnson, R. (1992). Creative controversy: Intellectual challenge in the classroom. Edina, MN: Interaction Book Company.
- Richardson, J. C., & Swan, K. (2003). Examining social presence in online courses in relation to students' perceived learning and satisfaction. *Journal of Asynchronous Learning Networks*, 7(1), 68-88.
- Shanthi, A & Thayalan, X. (2009). Social Presence and Motivation to Engage in Online Forums among Distance Learning Students. In Proceedings of Proceeding 2nd International Conference ILANNA 2009, Academy of Language Studies, UiTM Malaysia.
- Shanthi, A & Thayalan, X. (2010). Experience of Social Presence in Asynchronous Online Forums, *Journal of Language Studies*, UPENA: Malaysia
- Tu, C. H., & McIsaac, M. (2002). The relationship of social presence and interaction in online classes. *The American Journal of Distance Education*, 16(3) 131-150.
- Mykota, D. and Duncan, R. (2007). Learner characteristics as predictors Of online social presence. *Canadian Journal of Education* 30,1: 157- 170. Networks in Research Weblogs. University of Umeå, Sweden.
- Nippard, N. and Murphy, E. (2007). Social Presence in the web-based Synchronous Secondary Classroom. *Canadian Journal of Learning and Technology* 33(1).
- Pohl, M. & Michaelson, G., (1997). "I don't think that's an interesting dialogue": Computer-Mediated Communication and Gender in Women, Work and Computerization: Spinning a Web from Past to Future, Grundy, A.F., Kohler, D. Oechtering, V. & Peterson, U. (Eds.). *Proceedings of the 6 th International IFIP Conference*. Bonn, Germany: Springer.
- Postle, G., Sturman, A., Mangubhai, F., Cronk, P., Carmichael, A., McDonald, J., et al. (2003). *Online teaching and learning in higher education: A case study*. Canberra: Commonwealth of Australia.
- Rodino, M. (1997). Breaking out of binaries: Reconceptualizing gender and its relationship to language in computer-mediated communication. *Journal of Computer-Mediated Communication* 3(3). Available: <http://www.ascusc.org/jcmc/vol3/issue3/rodino.html>.
- Rourke, L., Anderson, T., Garrison, D. R., & Archer, W. (2004). Assessing social presence in asynchronous text-based computer conferencing. *Journal of Distance Education*, 14(2).

- Weaver, C. M., & Albion, P. R. (2005). Momentum in online discussions: The effect of social presence on motivation for participation. *Proceedings of Australasian Society for Computers in Learning in Tertiary Education Conference (ASCILITE 2005), Balance, Fidelity, Mobility: Maintaining the momentum?* (pp. 703-706). Sydney, Australia. Available at http://www.ascilite.org.au/conferences/brisbane05/blogs/proceedings/81_Weaver.pdf
- Wojahn, P. G. (1994). Computer-mediated communications: The great equalizer between men and women. *Technical Communications*, 41, 747–52.